



Screening and dereplication of microbial natural products extracts

Månsson, Maria; Vynne, Nikolaj Grønnegaard; Wietz, Matthias; Gram, Lone; Nielsen, Kristian Fog; Larsen, Thomas Ostenfeld

Publication date:
2011

Document Version
Early version, also known as pre-print

[Link back to DTU Orbit](#)

Citation (APA):
Månsson, M., Vynne, N. G., Wietz, M., Gram, L., Nielsen, K. F., & Larsen, T. O. (2011). *Screening and dereplication of microbial natural products extracts*. Abstract from The American Society of Pharmacognosy Annual Meeting 2011, San Diego, California, United States. <http://www.pharmacognosy.us/>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

SCREENING AND DEREPLICATION OF MICROBIAL NATURAL PRODUCTS EXTRACTS

Maria Månsson¹, Nikolaj G. Vynne², Matthias Wietz², Lone Gram², Kristian F. Nielsen¹ and Thomas O. Larsen¹

¹Department of Systems Biology, Technical University of Denmark ²National Food Institute, Technical University of Denmark

Cosmopolitan occurrence of a lot of antibiotics and other bioactives among microorganisms, stresses the need for efficient of dynamic screening and dereplication methods to avoid redundancy in isolation of compounds. Exploring our large collection of marine bacteria collected during the Galathea 3 expedition,¹ we use a combination of chemical profiling² and explorative solid-phase extraction (E-SPE)³ to assess the bacteria's potential to produce new and interesting molecules. We found the use of chemical profiling by LC-UV/MS very useful for marine bacteria such as *Vibrio*⁴ and *Pseudoalteromonas*.⁵ It enabled the grouping of similar strains at species and subspecies level disregarding geographical sampling locations. However, intraspecies differences were still observed. In *P. luteoviolacea*⁵ and *V. coralliilyticus*⁶ some of the differences were related to the production of antibacterial compounds. The chemical profile could be linked to a bioactivity profile using E-SPE,³ which through the use of three different ion-exchangers and a size-exclusion column gives information about the charge, size, and polarity of active components in an extract. This can be used to discriminate between possible candidates during dereplication and allows detailed mapping of bioactives.

1) Gram et al. *Mar. Biotechnol.* **2010**, 12(4):439-451; 2) Larsen et al. *Nat. Prod. Rep.* **2005**, 22(6):672-695; 3) Månsson et al. *J. Nat. Prod.* **2010**, 73(6):1126-1132; 4) Wietz et al. *Mar. Drugs* **2010**, 8(12):2946-2960; 5) Vynne et al. *Mar. Biotechnol.* **2011**, in press; 6) Wietz et al. *Environ. Microbiol Rep.* **2011**, in press.